South Carolina Energy Office

The Energy Connection

State Budget and Control Board

Summer 2004

Palmetto State Clean Fuels Coalition Achieves National Designation

The Palmetto State Clean Fuels Coalition (PSCFC), a group of public and private sector groups dedicated to the advancement of alternative fuels and vehicles and sponsored by the South Carolina Energy Office, held its official designation event on January 28, 2004 – just days after an ice storm shut down most parts of the state. The event, held at the State Museum in Columbia, was attended by 70 stakeholders from the Aiken, Columbia, and Rock Hill Metro areas.

The event allowed the U.S. Department of Energy to recognize all that the Coalition has done to deploy alternative fuels and alternative fuel vehicles throughout its nine-county region. Through the formal designation into the Clean Cities Program, the PSCFC can compete for federal grant funds to support alternative fuel activities. Use of alternative fuels not only improves air quality, but also develops markets for domestically produced fuels. Nationwide, only 82 local groups have achieved this designation.

First, stakeholders traveled by a Compressed Natural Gas (CNG) bus courtesy of the Central Midlands Regional Transit Authority and a bio-diesel fueled bus courtesy of the University of South Carolina, to the State House for a media event. At the State House, five stakeholders gave press statements regarding their alternative fuel activities. These included announcements of the Clean Cities designation by Wendy Bell of the PSCFC, use of CNG in seven CMRTA transit buses by Mitzi Teel-Javers, the creation of "Alternative Fuel Zones" at the University of South Carolina by Derrick Huggins, the development of a publicly accessible CNG station on Flora Street in Columbia by Ken Price of SCE&G, and the use of bio-diesel in Newberry School District buses by Donald Tudor of the South Carolina Department of Education.

U.S. DOE Atlanta Region Office Director Jim Powell and SCEO Director John Clark add the PSCFC star to the map of officially designated Clean Cities programs throughout the country.

After the media event, stakeholders traveled back to the museum for the designation ceremony. Jim Powell, David Dunagan, and David Waldrop of the U.S. Department of Energy were on hand to congratulate stakeholders and present them with certificates from Secretary of Energy Spencer Abraham. The PSCFC star was also added to the map of officially designated Clean Cities programs throughout the country.

There are currently 1,232 alternative fuel vehicles (AFV) operating in this region, which includes the Rock Hill, Columbia, and Aiken metro areas. Through 2008, stakeholders representing both government and private businesses have committed to add over 2,000 operational alternative fuel vehicles to South Carolina's roads.

The Clean Cities Program is sponsored by the United States Department of Energy. The mission of this program is to enhance the nation's energy security by reducing dependence on foreign oil and improving air quality by supporting public and private partnerships that deploy clean-burning AFVs and build their associated fueling infrastructure. Through this program, the U.S. Department of Energy hopes that one million AFVs will operate exclusively on alternative fuels in the United States by 2010, and that those AFVs will displace one billion gallons of gasoline a year.

Additional information about the PSCFC can be found by visiting http://www.palmettocleanfuels.org, or contacting Wendy Bell, Clean Cities Coordinator, at (803) 327-9041 or at wbell@catawbacog.org.

South Carolina Energy Office
1201 Main Street Suite 1010
Columbia, South Carolina 29201
(803) 737-8030
1-800-851-8899
FAX (803) 737-9846
http://www.energy.sc.gov

Notes From the Director

John F. Clark

As the current fiscal year draws to a close, the South Carolina Energy Office staff is feeling pretty good, and rightly so. Because of the efforts of our staff:

- Projects have been implemented in public institutions that will save taxpayers over $62 million in energy costs;
- South Carolinians are utilizing increasing amounts of renewable energy, including landfill gas, ethanol, biodiesel, and solar;
- Commercial, industrial and institutional energy users are saving millions of dollars as a result of information received through our energy savings workshops, energy audits, LEED promotions, energy accounting software, energy data dissemination, and technical assistance;
- Residential energy users are saving millions of dollars as a result of energy conservation information obtained through our web site, our publications, our direct help line, our energy education programs in schools, and other outreach efforts;
- Drivers are consuming less petroleum products and citizens are breathing cleaner air as a result of our activities in support of clean-burning transportation fuel;
- Citizens are enjoying reliability, security and minimum disruption as a result of our energy emergency preparedness activities;
- Greater education dollars are resulting from our management of responsibilities pertaining to the Barnwell Low-Level Radioactive Waste Disposal Site.

I once heard a football player state, "We are not going to sit around and rest on our morals." In the Energy Office, we feel pretty good about our morals, but we have no intention of resting on our laurels.

We have just finished writing our Strategic Energy Action Plan for Fiscal Year 2004-2005. We plan to continue performing those activities that have proven successful, but we want to do much more. Specifically, we plan to:

- Increase energy conservation financial assistance options for public institutions;
- Provide utility bill and rate analysis services to state agencies;
- Initiate a program to introduce South Carolinians to energy efficiency home loans;
- Partner with local homebuilders' associations to promote energy-efficient, environmentally-friendly EarthCraft homes;
- Develop a software model to forecast South Carolina energy needs and impacts;
- Survey the state's wind currents for possible development of wind energy;
- Develop and implement a statewide biomass energy strategy;
- Facilitate electrification of truck stop ancillary services, thus reducing energy use and emissions resulting from idling truck engines.

The South Carolina Energy Office strives for continuous improvement, and we welcome input from you, our customers, on new and better ways to serve you and improve the energy-related well-being of the citizens of South Carolina.

What's Happening Around the State

SCEO sponsored HVAC Plant Improvement workshops will take place June 15 – 16 in Columbia, SC. This workshop for technical and non-technical personnel will assist attendees in developing the ability to recognize cost saving measures in HVAC equipment/operation and implement improvements. Participants will also learn about the latest measurement instrumentation and the handling and recovery of refrigerants. For more information and to register, contact melanie@boilerinstitute.com.

Join us for the Ag in the Classroom/ SC Energy Office Biomass Professional Development Institute, focusing on lesson plans and related materials, which will take place June 14-18 at the Clarion Town House Hotel. The workshop is free and open to South Carolina 6th-12th grade classroom teachers. Three graduate credits are offered for participants successfully completing all sessions and follow-up assignments of the Institute. For more information or to register, contact Maria Samot at msamot@scfb.com.

The Energy 2 Learn (E2L) Conference for Teachers will take place June 23 at Seawells, located across from the State Fairgrounds in Columbia. This free, one-day conference trains teachers to use the latest energy information, classroom materials, and energy activities. All materials meet the South Carolina curriculum standards for math, science, language arts, and social studies. To register, see http://www.energy.sc.gov/PDFs/e2lreg04.pdf.

Science Students Shine in Energy

The South Carolina Energy Office recently recognized students at the 48th annual USC Central South Carolina Region II Science and Engineering Fair, held in Columbia, and at the South Carolina Junior Academy of Science awards, held in Charleston. Incidentally, one student from each competition was chosen to represent South Carolina at an interational competition.

SC Energy Office Award winners of USC's Region II Science and Engineering Fair each received a savings bond and a compact fluorescent light bulb as prizes.

Junior Division (Grades 5 - 8)		Senior Division (Grades 9 - 12)	
1st Place: $100 savings bond	Eliza Irene Stucker Dutch Fork Middle School	1st Place: $100 savings bond	Oliver Gothe Dutch Fork High School
2nd Place: $75 savings bond	Alexander Nesbitt Hillcrest Middle School	2nd Place: $75 savings bond	David Monts Dutch Fork High School
3rd Place: $50 savings bond	Ryan M. Hughes Cardinal Newman School	3rd Place: $50 savings bond	Ted Wilcox Dreher High School

USC's Region II Science and Engineering Fair encompasses students in grades 5 - 12 from public and private schools in nine counties: Calhoun, Clarendon, Fairfield, Kershaw, Lexington, Richland, Newberry, Orangeburg, and Sumter. For more information, contact Dr. Don Jordan at jordan@gwm.sc.edu.

D'Juana Wilson, left, of the South Carolina Energy Office announced the SC Energy Office award winners of the USC Region II Science and Engineering Fair: Ryan Hughes, Alexander Nesbitt, Eliza Stucker, David Monts, and Oliver Gothe. Not pictured: Ted Wilcox.

The South Carolina Junior Academy of Science (SCJAS) is the only state-wide organization of high school students designed to stimulate and promote interest among its members through the development of independent research in science and mathematics. These investigations are of a problem solving nature and their design serves as a means for students to do exciting things in science and mathematics beyond regular classroom activities.

Rather than bring their projects for viewing by scientist judges, SCJAS participants submit a paper or oral report on their findings. This competition is open to all South Carolina students.

SCJAS energy project winners were Nicholas Salerno, Benjamin Rosenburg, Patrick Flynn and Iona Lupascu.

SCJAS winners whose projects involved study on energy included:

Iona Lupascu	Spring Valley High School
Patrick Flynn	Spring Valley High School
Benjamin Rosenburg	Hilton Head High School
Nicholas Salerno	Governor's School for Science and Mathematics

SCJAS energy project winners were awarded $100 cash.

For information on the South Carolina Junior Academy of Science or how your organization can become a member or sponsor of the SCJAS, contact Dr. Karen Fox, Director of SCJAS at kfox@med.sc.edu.

In addition, Oliver Goethe and Ioana Lupascu won Grand Awards. Their efforts earned them the right to represent South Carolina at the International Science and Engineering Fair in May in Portland, Oregon. They also received $1,000 scholarships to attend USC and membership in the South Carolina Academy of Science.

Congratulations to all our winners, and kudos in their continuing research.

Solar Power Proves its Worth

Williamsburg County taxpayers have saved over $30,000 in utility bills thus far as a result of a South Carolina Energy Office project to install solar water equipment at the county jail facility in Kingstree. And the savings keep on rolling.

The Energy Office awarded a grant to Williamsburg County in 1990 to install an active solar water heating system with thermal storage on the Williamsburg County Jail. The 10-collector array was installed to pre-heat 500 gallons of water for the showers and bathrooms of this 180-bed facility.

Recently, Energy Office staff visited the installation and determined that because of staff turnover in past years, the system needing servicing, and new personnel needed training. SCEO then contracted to provide these services.

With the system back at peak performance, temperature readings are rising to the required 130°F and higher.

This system is providing one-third of the hot water needed at the facility, saving the county over $2500 annually. According to SCEO solar specialist Jean-Paul Gouffray, "With proper maintenance, these systems hold up very well. I fully expect the Williamsburg system to provide another $30,000 in cost savings to taxpayers there, and more."

Energy Office A Big Part of EdVenture

Visitors to the new EdVenture Children's Museum don't even have to walk in the door to begin learning, thanks to the Energy Office.

Just to the left of the entrance, a three-story Energy Tower built with federal funds obtained by the Energy Office gives kids and adults a hands-on learning experience.

The tower includes: a demonstration of the energy savings of compact fluorescent light bulbs (CFLs) over incandescent light bulbs; a hand pedaling station where kids can light an incandescent bulb; a photovoltaic cell; an explanation of renewable and non-renewable sources of energy; information about sustainable or green building practices; and visible circuitry, wiring, and metering showing how solar energy is collected, stored, and routed to an appliance. It also includes an open area on the 3rd floor where kids can monitor outdoor environmental conditions.

The museum is located at 211 Gervais Street in front of the State Museum. EdVenture is open Tuesday - Saturday, 9am - 5pm, and Sunday, Noon - 5pm. It is also open Mondays and all federal and school holidays from Memorial Day through Labor Day. It is closed Thanksgiving, Christmas Eve and Christmas Day. Admission is $5.95 per child, $7.95 per adult. Children under one are free.

SCEO Brings in Federal Funding

The South Carolina Energy Office recently garnered $103,7000 in competitive Omnibus grant funding from the U.S. Department of Energy-Atlanta Regional Office in the form of cooperative agreements in the following areas of renewable energy and energy conservation and efficiency:

Green Building Charrettes: SCEO received $15,000 for a multi-state proposal for South Carolina and Georgia to fund two charrettes and to develop a workbook for others on the planning and facilitation of a green building charrette. The objectives of green building charrettes (intensive design workshops involving all project stakeholders) are to help design teams and building owners to understand the benefits of energy and environmental design.

Wind Power Study: SCEO received $31,200 to perform a wind study to survey the entire state and identify the areas of the state that have the highest potential for wind energy. Santee Cooper will partner with SCEO in this effort.

Industrial Programs-State Partner Outreach: SCEO received $57,500 in funding to facilitate outreach meetings with 30-35 top energy consuming industrial firms in South Carolina. The focus of the outreach meetings will be to communicate and educate large energy-using industries about the U.S. Department of Energy's Best Practices program and present information on how U.S. Department of Energy programs can positively impact their bottom lines. U.S. Department of Energy will partner with SCEO on this project.

Barnwell County Reaps Benefits of Partnership

Radioactive waste disposal has helped pay for a new library, water and sewer improvements, better transit options, new sheriff's and health department buildings, and new fire trucks in Barnwell, Bamberg, and Allendale counties. Since 2000, $9 million has been withdrawn from the Barnwell County Economic Development Fund to pay for these and other economic development projects in the Tri-County area. This summer, an additional $168,800 will be spent on building four additional fire stations in Barnwell County.

The Barnwell County Economic Development Fund was created in July 2000 when South Carolina joined Connecticut and New Jersey in the Atlantic Low-Level Radioactive Waste Management Compact. As an incentive for South Carolina's membership in the Compact, the states of Connecticut and New Jersey agreed to pay $12 million to South Carolina.

This money had been earmarked by the two states to provide an incentive for a town to host a radioactive waste disposal site for the two states. Since South Carolina agreed to permanently host a disposal site for the Compact, officials in Connecticut and New Jersey agreed to pay that money for use by Barnwell County.

The money, administered by the South Carolina Energy Office, may only be expended for purposes of economic development in the Barnwell County area including projects of the Barnwell County Economic Development Corporation and projects of the Tri-County alliance which includes Barnwell, Bamberg, and Allendale Counties. Projects in the Williston area of Aiken County are also allowed.

Green is Really Growing in South Carolina

In America, there's a lot of talk about energy conservation and protecting the environment. A popular phrase for expressing those issues is "The Greening of America." In South Carolina, as a result of the efforts of the South Carolina Energy Office and its allies, that phrase has taken on significant added dimension.

Through relationships and actions with the U.S. Green Building Council (USGBC), their LEED (Leadership in Energy and Environmental Design) Program, the SCEO and its EVERGREEN ALLIANCE members, GREEN has really begun to grow in South Carolina.

The USGBC, a non-profit organization headquartered in Washington, DC, developed and implemented LEED, a "green" building rating system for commercial and high-rise residential buildings for new construction and major renovation. It is a performance based system versus a prescriptive approach and is based on accepted energy and environmental principles, while also allowing for emerging concepts. LEED promotes and guides comprehensive and whole building integrated design.

The SCEO embraced the LEED program at a USGBC LEED Intermediate Workshop in Sea Pines Plantation on Hilton Head Island, last December. Additionally, in February, York Technical College held a Green Building Charrette, during which the LEED program and its benefits were articulated.

Today, in South Carolina, there are 19 projects registered for LEED Certification, and one Certified LEED Project – Herman Hipp Hall at Furman University. And, there are 60 LEED Accredited Professionals in South Carolina. These projects and professionals are listed on the South Carolina Energy Office's website at www.energy.sc.gov.

The USGBC, LEED, and Green Buildings represent design and construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and its occupants with regard to the following; safeguarding water use and water use efficiency; promoting energy efficiency and renewable energy; conserving materials and resources; and promoting clean indoor environmental quality.

For more information, contact Sonny DuBose of the South Carolina Energy Office at (803) 737-9852 or visit the LEED web site at http://www.usgbc.org/.

Public Schools Garner $6.8 Million Savings

Twenty-five low- income school districts have received South Carolina Energy Office School Initiative grants for lighting retrofits and other energy efficiency improvements. Fourteen school districts have completed projects thus far. They received $1,652,106 in grant funds and will realize $4,140,000 in energy savings over the expected useful lives of the projects. Once the remaining eleven school districts complete their projects, the expected total energy savings will increase to $6,824,000.

SchoolDude.com to Provide Tracking and Accounting for State Agencies

The South Carolina Energy Office (SCEO) has selected SchoolDude.com to provide a statewide energy tracking and accounting solution for all South Carolina public agencies including schools, colleges, universities, and state government agencies. This initiative will provide S.C. agencies with improved tools to better manage and reduce their energy costs, simplify the process of providing required energy reporting to the state, and provide benchmarking comparisons for agencies to compare their results to others in the state.

The SCEO developed the South Carolina S.A.V.E.$ (Schools and Agencies Verify Energy Dollars) in 1994 to assist schools, colleges and state government agencies in controlling their energy costs. "Moving our agencies to an Internet-based tool will dramatically simplify the process of reporting information and the rollup of that information to the state, supporting our users, and making the application more useful for managing energy costs at the agency level," says Julia Parris, the South Carolina S.A.V.E.$ Program Coordinator.

SchoolDude's product suite is designed specifically for educational institutions and includes solutions for work order processing, technology workflow management, preventive maintenance scheduling, facility usage scheduling, utility tracking and inventory management. Because the application services are delivered over the Internet, the technology is affordable for both small and large districts. More than 650 educational institutions across the nation are already utilizing SchoolDude's web-native solutions.

Utility bills typically comprise 25 percent of the overall maintenance and operations budget for school districts, or 2-3 percent of the overall operating budget. But according to the National Center of Education Statistics, 61 percent of public school districts experienced energy budget shortfalls in 2001. In 2002-2003 S.C. school districts spent $96.1 million on energy utility costs; providing them with tools to save just a small portion could save the state millions, paying for this project many times over.

State Agencies Enjoy Financial Benefits

ConserFund, the South Carolina Energy Office's low-cost financing program for energy efficiency improvements in public institutions, has saved taxpayers approximately $17.7 million thus far.

Since its inception, ConserFund has loaned approximately $7.2 million to state agencies, colleges and universities, school districts and local governments for energy savings improvements.

During the current fiscal year, ConserFund has committed funding for: the installation of pneumatic controls in the Wheelwright Auditorium at Coastal Carolina University, expected to save taxpayers more than $120,000; installation of five efficient 10-ton air conditioning units in the Rutledge Building, operated by the Division of General Services, expected to save taxpayers about $405,000; and lighting retrofits at the University of South Carolina, expected to save taxpayers nearly $3.1 million. Lastly, Charleston Area Regional Transit Authority received $500,000 to ensure public bus system long-term success, by saving consumers over $570,000 annually in avoided gasoline costs.

Five Higher Ed Institutions Earn Rewards

South Carolina state agencies and public schools continue to enjoy the Rewards for Higher Education Energy Efficiency Projects (RHEEEP) program, with five colleges and universities sharing in $98,256 in grants for this year's round of funding. Recipients include The Citadel ($20,000), Clemson University ($20,000), the Medical University of South Carolina ($20,000), Greenville Technical College ($20,000), and Piedmont Technical College($18,256).

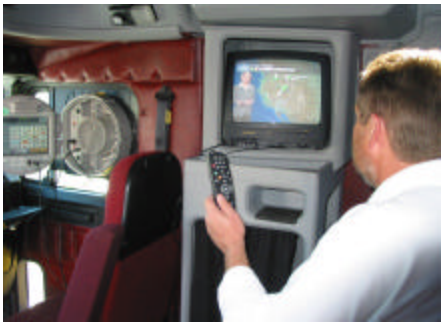
RHEEEP allows facilities departments to reap the rewards of energy cost saving projects. Facilities departments earn rewards ranging from $1,000 to $20,000 for implementing and reporting energy cost savings projects. The reward funds must be spent for items that will improve energy management and efficiency of facilities. For more information, contact Rick Baldauf at rbaldauf@gs.sc.gov, or (803) 737-8030.

Energy Office Awarded $1.5 Million for Travel Center Electrification

The South Carolina Energy Office recently received $1.5 million in competitive federal grant funding from the National Association of State Energy Offices and the State Technology Advancement Collaborative (NASEO/STAC) for its proposal to install IdleAire Technologies Corporation's Advanced Travel Center Electrification (ATE) system in 150 truck parking spaces at three truckstops along the I-85 corridor in South Carolina, North Carolina, and Georgia. ATE technology allows truck drivers to access electrical shore power and a range of communications and entertainment services in the truck cab without idling their engines, while resting the required 10 hours for every 11 hours that they drive.

Idling trucks in the United States consume 20 million barrels of oil annually, at a cost of $1.8 billion. In addition, idling trucks produce 11 million tons of carbon dioxide, which is the primary greenhouse gas linked to climate change and global warming, and 150,000 tons of nitrogen oxides (NO_x), which is the prime component of ground-level ozone.

Each truckstop along the I-85 corridor in South Carolina, North Carolina, and Georgia will provide approximately 50 truck parking spaces equipped with the electrification technology and will remove approximately 1,647 metric tons of emissions annually, including 33.47 metric tons of NO_x and 0.66 metric tons of particulate matter (PM_{10}). Fuel saved at the three locations is expected to be nearly 2.4 million gallons annually, worth about $3.7 million.



The South Carolina Energy Office, IdleAire Technologies Corporation, the South Carolina Department of Health and Environmental Control, the North Carolina Department of Environment and Natural Resources, and the Georgia Division of Energy Resources have teamed to identify three travel centers along the I-85 corridor where IdleAire will deploy its system.

IdleAire Corporation will provide the required federal match funding for this project, which will cost $3.5 million in total.

For more information, contact Kate Billing, kbilling@gs.sc.gov, at the South Carolina Energy Office, or visit www.idleaire.com.

Professional Certification in Energy Management

When you've earned the right to put the initials "CEM" behind your name, you've distinguished yourself among energy management professionals. Simply put, the designation CEM, which stands for Certified Energy Manager, recognizes individuals who have demonstrated high levels of experience, competence, proficiency, and ethical fitness in the energy management profession. By attaining the status of CEM, individuals can join an elite group of 6,000 professionals serving industry, business and government throughout the U.S. and in 22 countries abroad. These high-achieving individuals comprise a "Who's Who" in the energy management field.

The Association of South Carolina Energy Managers and the South Carolina Energy Office will offer a classroom-training program to prepare qualified energy managers to take the certification examination.

For additional details on the CEM program, see www.aeecenter.org/certification/CEMpage.htm.

The program will consist of five days of classroom instruction and one day of examination. The proposed fee is $450 to cover the training manual and examination fee. To encourage participation, ASCEM and SCEO are covering all other costs. The usual registration fee for this type of training exceeds $1,000.

The training program will be held in Columbia in late summer or fall 2004. It will be scheduled one day a week for five weeks, and the examination will be administered the sixth week. For more information, please contact Julia Parris at 803-737-9825, 1-800-851-8899 statewide, or at jparris@gs.sc.gov.

Energy Emergency Preparedness in South Carolina

South Carolinians have learned the hard way the devastation caused by catastrophic storms. We know first hand what it's like to live without power, water, and sewer in the days following disaster. Our geographic location and climate make us susceptible to hurricanes, tornadoes, floods, earthquakes, and ice storms. What most people don't know is the role the South Carolina Energy Office plays during such catastrophes.

With any natural disaster, a major concern is energy; most specifically, electricity. The number of people without power during and following a disaster is one measure of how catastrophic an event is. The Energy Office, partnered with the South Carolina Public Service Commission, works during and after each disaster to gather and organize information about energy resources.

We staff ESF-12, or Emergency Support Function-12. This is the Energy Desk, and serves as a central point for information regarding energy during a disaster. The Energy Desk is located at the State Emergency Operations Center, which is operated by the state's Emergency Management Division. We collect information from the utilities, cooperatives, and municipalities operating in the state to assess their levels of preparedness, damage to their systems and ways we can help them.

The Energy Office works to provide updates on the number of customers without power, number of poles/lines down, and the estimated time of power restoration. This information is used to assess damage and needs after a storm. We also coordinate efforts to help with the restoration of power. For example, a utility may have problems restoring power to an area because of downed trees. The Energy Office coordinates with the Department of Transportation and the National Guard to get critical roads cleared to allow more rapid restoration of power.

Unfortunately, South Carolina will always face the threat of natural disaster, but being prepared is the key to mitigating the effects of these disasters. However, natural disasters are only one cause of energy disruptions. National and international political events, terrorism, and dislocations in the energy industry can also lead to disruptions in energy supply. This has become more of a threat in recent years.

The Emergency Management Division works to coordinate the efforts of all groups that respond during an emergency, to ensure quick and efficient recovery efforts. The Energy Office and Public Service Commission participate in annual training exercises sponsored by the Emergency Management Division to make sure we are ready.

Preparedness is the key to any emergency, and the Energy Office works hard to make sure we are ready to respond.

Director John Clark
Editor Teka Roundtree

South Carolina Energy Office
1201 Main Street, Suite 1010
Columbia, South Carolina 29201